

## SEQUENCE LISTING

<110> Goodman, Corey  
Kid, Thomas  
Brose, Katja  
Tessier-Lavigne, Marc

<120> Modulating Robo: Ligand Interactions

<130> B98-031-3

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<150> 60/065,544

<151> 1997-11-14

<150> 60/081,057

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<170> PatentIn Ver. 2.0

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Leu	Ser	Asn	Tyr	Lys	His	Leu	Thr	Leu	Ile	Asp	Leu	Ser	Asn	Asn	Arg		
	770					775					780						
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785					790					795					800		
Thr	Leu	Ile	Leu	Ser	Tyr	Asn	Arg	Leu	Arg	Cys	Ile	Pro	Pro	Arg	Thr		
				805					810					815			
Phe	Asp	Gly	Leu	Lys	Ser	Leu	Arg	Leu	Leu	Ser	Leu	His	Gly	Asn	Asp		
			820					825					830				
Ile	Ser	Val	Val	Pro	Glu	Gly	Ala	Phe	Asn	Asp	Leu	Ser	Ala	Leu	Ser		
		835					840					845					
His	Leu	Ala	Ile	Gly	Ala	Asn	Pro	Leu	Tyr	Cys	Asp	Cys	Asn	Met	Gln		
	850					855					860						
Trp	Leu	Ser	Asp	Trp	Val	Lys	Ser	Glu	Tyr	Lys	Glu	Pro	Gly	Ile	Ala		
865					870					875					880		
Arg	Cys	Ala	Gly	Pro	Gly	Glu	Met	Ala	Asp	Lys	Leu	Leu	Leu	Thr	Thr		
Pro	Ser	Lys	Lys	Phe	Thr	Cys	Gln	Gly	Pro	Val	Asp	Val	Asn	Ile	Leu		
900						905						910					
Ala	Lys	Cys	Asn	Pro	Cys	Leu	Ser	Asn	Pro	Cys	Lys	Asn	Asp	Gly	Thr		
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Cys	Asn	Ser	Asp	Pro	Val	Asp	Phe	Tyr	Arg	Cys	Thr	Cys	Pro	Tyr	Gly		
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975

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Ser Ser Gln Ala Gly Phe Thr Cys Glu Cys Gln Glu Gly Trp Met Gly  
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Pro Leu Cys Asp Gln Arg Thr Asn Asp Pro Cys Leu Gly Asn Lys Cys  
 1365 1370 1375

Val His Gly Thr Cys Leu Pro Ile Asn Ala Phe Ser Tyr Ser Cys Lys  
 1380 1385 1390

Cys Leu Glu Gly His Gly Gly Val Leu Cys Asp Glu Glu Glu Asp Leu  
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Phe Asn Pro Cys Gln Ala Ile Lys Cys Lys His Gly Lys Cys Arg Leu  
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Ser Gly Leu Gly Gln Pro Tyr Cys Glu Cys Ser Ser Gly Tyr Thr Gly  
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Asp Ser Cys Asp Arg Glu Ile Ser Cys Arg Gly Glu Arg Ile Arg Asp  
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Tyr Tyr Gln Lys Gln Gln Gly Tyr Ala Ala Cys Gln Thr Thr Lys Lys  
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Val Ser Arg Leu Glu Cys Arg Gly Gly Cys Ala Gly Gly Gln Cys Cys  
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Gly Pro Leu Arg Ser Lys Arg Arg Lys Tyr Ser Phe Glu Cys Thr Asp  
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Gly Ser Ser Phe Val Asp Glu Val Glu Lys Val Val Lys Cys Gly Cys  
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Thr Arg Cys Val Ser  
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 35 40 45

Tyr Lys Lys Leu Lys Arg Ile Asp Ile Ser Lys Asn Gln Ile Ser Asp  
 50 55 60

Ile Ala Pro Asp Ala Phe Gln Gly Leu Lys Ser Leu Thr Ser Leu Val  
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 Ser Gly Leu Lys Thr Leu Met Leu Arg Ser Asn Leu Ile Gly Cys Val  
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 Ser Asn Asp Thr Phe Ala Gly Leu Ser Ser Val Arg Leu Leu Ser Leu  
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 Tyr Asp Asn Arg Ile Thr Thr Ile Thr Pro Gly Ala Phe Thr Thr Leu  
                   65                  70                  75                  80  
 Val Ser Leu Ser Thr Ile Asn Leu Leu Ser Asn Pro Phe Asn Cys Asn  
                   85                  90                  95  
 Cys His Leu Gly Ala Gly Leu Gly Lys Trp Leu Arg Lys Arg Arg Ile  
                   100                  105                  110  
 Val Ser Gly Asn Pro Arg Cys Gln Lys Pro Phe Phe Leu Lys Glu Ile  
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 Cys Met Asp Glu Val Asn Ser Tyr Ser Cys Leu Cys Ala Glu Gly Tyr  
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 Ser Gly Gln Leu Cys Glu Ile Pro Pro His Leu Pro Ala Pro Lys Ser  
                   50                  55                  60  
 Pro Cys Glu Gly Thr Glu Cys Gln Asn Gly Ala Asn Cys Val Asp Gln  
                   65                  70                  75                  80  
 Gly Asn Arg Pro Val Cys Gln Cys Leu Pro Gly Phe Gly Gly Pro Glu  
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 Cys Glu Lys Leu Leu Ser Val Asn Phe Val Asp Arg Asp Thr Tyr Leu  
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 Gln Phe Thr Asp Leu Gln Asn Trp Xaa Arg Xaa Asn Ile Thr Leu Gln  
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 Val Phe Thr Ala Glu Asp Asn Gly Ile Leu Leu Tyr Asn Gly Gly Asn  
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155

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 Thr Ala Ser Lys Val Pro Ile Met Glu Cys Arg Gly Gly Cys Gly Pro  
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 Gln Cys Cys Gln Pro Thr Arg Ser Lys Arg Arg Lys Tyr Val Phe Gln  
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 Cys Gly Cys Leu Ala Cys Ser  
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 Val Gly Val Ile Thr Glu Ala Arg Cys Pro Arg Val Cys Ser Cys Thr  
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 Gly Leu Asn Val Asp Cys Ser His Arg Gly Leu Thr Ser Val Pro Arg  
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 Lys Ile Ser Ala Asp Val Glu Arg Leu Glu Leu Gln Gly Asn Asn Leu  
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 Thr Val Ile Tyr Glu Thr Asp Phe Gln Arg Leu Thr Lys Leu Arg Met  
 115 120 125  
 Leu Gln Leu Thr Asp Asn Gln Ile His Thr Ile Glu Arg Asn Ser Phe  
 130 135 140  
 Gln Asp Leu Val Ser Leu Glu Arg Leu Asp Ile Ser Asn Asn Val Ile

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Lys	Gly	Leu	Val	Glu	Leu	Glu	Ile	Leu	Thr	Leu	Asn	Asn	Asn	Asn
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Thr	Ser	Leu	Pro	His	Asn	Ile	Phe	Gly	Gly	Leu	Gly	Arg	Leu	Arg
	210					215					220			Ala
Leu	Arg	Leu	Ser	Asp	Asn	Pro	Phe	Ala	Cys	Asp	Cys	His	Leu	Ser
225					230					235				Trp
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Leu	Ser	Arg	Phe	Leu	Arg	Ser	Ala	Thr	Arg	Leu	Ala	Pro	Tyr	Thr
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Cys	Gln	Ser	Pro	Ser	Gln	Leu	Lys	Gly	Gln	Asn	Val	Ala	Asp	Leu
			260					265					270	His
Asp	Gln	Glu	Phe	Lys	Cys	Ser	Gly	Leu	Thr	Glu	His	Ala	Pro	Met
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Cys	Gly	Ala	Glu	Asn	Ser	Cys	Pro	His	Pro	Cys	Arg	Cys	Ala	Asp
	290					295					300			Gly
Ile	Val	Asp	Cys	Arg	Glu	Lys	Ser	Leu	Thr	Ser	Val	Pro	Val	Thr
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Pro	Asp	Asp	Thr	Thr	Asp	Val	Arg	Leu	Glu	Gln	Asn	Phe	Ile	Thr
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Leu	Pro	Pro	Lys	Ser	Phe	Ser	Ser	Phe	Arg	Arg	Leu	Arg	Arg	Ile
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Leu	Ser	Asn	Asn	Asn	Ile	Ser	Arg	Ile	Ala	His	Asp	Ala	Leu	Ser
		355					360					365		Gly
Leu	Lys	Gln	Leu	Thr	Thr	Leu	Val	Leu	Tyr	Gly	Asn	Lys	Ile	Lys
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385					390					395				400
Leu	Asn	Ala	Asn	Glu	Ile	Ser	Cys	Ile	Arg	Lys	Asp	Ala	Phe	Arg
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Leu	His	Ser	Leu	Ser	Leu	Leu	Ser	Leu	Tyr	Asp	Asn	Asn	Ile	Gln
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		435					440					445		His
Leu	Ala	Lys	Asn	Pro	Phe	Ile	Cys	Asp	Cys	Asn	Leu	Arg	Trp	Leu
		450				455					460			Ala
Asp	Tyr	Leu	His	Lys	Asn	Pro	Ile	Glu	Thr	Ser	Gly	Ala	Arg	Cys
465					470					475				Glu
Ser	Pro	Lys	Arg	Met	His	Arg	Arg	Arg	Ile	Glu	Ser	Leu	Arg	Glu
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Lys	Phe	Lys	Cys	Ser	Trp	Gly	Glu	Leu	Arg	Met	Lys	Leu	Ser	Gly
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Cys	Arg	Met	Asp	Ser	Asp	Cys	Pro	Ala	Met	Cys	His	Cys	Glu	Gly	Thr
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Thr	Val	Asp	Cys	Thr	Gly	Arg	Arg	Leu	Lys	Glu	Ile	Pro	Arg	Asp	Ile
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Pro	Leu	His	Thr	Thr	Glu	Leu	Leu	Leu	Asn	Asp	Asn	Glu	Leu	Gly	Arg
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Ile	Ser	Ser	Asp	Gly	Leu	Phe	Gly	Arg	Leu	Pro	His	Leu	Val	Lys	Leu
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Glu	Leu	Lys	Arg	Asn	Gln	Leu	Thr	Gly	Ile	Glu	Pro	Asn	Ala	Phe	Glu
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Gly	Ala	Ser	His	Ile	Gln	Glu	Leu	Gln	Leu	Gly	Glu	Asn	Lys	Ile	Lys
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Glu	Ile	Ser	Asn	Lys	Met	Phe	Leu	Gly	Leu	His	Gln	Leu	Lys	Thr	Leu
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Asn	Leu	Tyr	Asp	Asn	Gln	Ile	Ser	Cys	Val	Met	Pro	Gly	Ser	Phe	Glu
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His	Leu	Asn	Ser	Leu	Thr	Ser	Leu	Asn	Leu	Ala	Ser	Asn	Pro	Phe	Asn
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Cys	Asn	Cys	His	Leu	Ala	Trp	Phe	Ala	Glu	Cys	Val	Arg	Lys	Lys	Ser
			660					665					670		
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Asn	Ser	Glu	Gly	Cys	Leu	Gly	Asp	Gly	Tyr	Cys	Pro	Pro	Ser	Cys	Thr
705					710					715					720
Cys	Thr	Gly	Thr	Val	Val	Ala	Cys	Ser	Arg	Asn	Gln	Leu	Lys	Glu	Ile
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Pro	Arg	Gly	Ile	Pro	Ala	Glu	Thr	Ser	Glu	Leu	Tyr	Leu	Glu	Ser	Asn
			740					745					750		
Glu	Ile	Glu	Gln	Ile	His	Tyr	Glu	Arg	Ile	Arg	His	Leu	Arg	Ser	Leu
		755					760					765			
Thr	Arg	Leu	Asp	Leu	Ser	Asn	Asn	Gln	Ile	Thr	Ile	Leu	Ser	Asn	Tyr
	770					775					780				
Thr	Phe	Ala	Asn	Leu	Thr	Lys	Leu	Ser	Thr	Leu	Ile	Ile	Ser	Tyr	Asn
785					790					795					800
Lys	Leu	Gln	Cys	Leu	Gln	Arg	His	Ala	Leu	Ser	Gly	Leu	Asn	Asn	Leu
				805					810					815	
Arg	Val	Val	Ser	Leu	His	Gly	Asn	Arg	Ile	Ser	Met	Leu	Pro	Glu	Gly
			820					825					830		
Ser	Phe	Glu	Asp	Leu	Lys	Ser	Leu	Thr	His	Ile	Ala	Leu	Gly	Ser	Asn
	835						840					845			
Pro	Leu	Tyr	Cys	Asp	Cys	Gly	Leu	Lys	Trp	Phe	Ser	Asp	Trp	Ile	Lys
	850					855					860				
Leu															

Met	Lys	Asp	Lys	Leu	Leu	Ser	Thr	Pro	Ser	Ser	Ser	Val	Cys
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Glu	Gln	Pro	Cys	Gln	Asn	Gln	Ala	Gln	Cys	Val	Ala	Leu	Arg
		915					920					925	
Glu	Tyr	Gln	Cys	Leu	Cys	Gln	Pro	Gly	Tyr	His	Gly	Lys	Glu
	930					935					940		
Phe	Met	Ile	Asp	Ala	Cys	Tyr	Gly	Asn	Pro	Cys	Arg	Asn	Thr
945					950					955			960
Cys	Thr	Val	Leu	Glu	Glu	Gly	Arg	Phe	Ser	Cys	Gln	Cys	Gly
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Tyr	Thr	Gly	Ala	Arg	Cys	Glu	Thr	Asn	Ile	Asp	Asp	Cys	Glu
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Ile	Lys	Cys	Gln	Asn	Asn	Ala	Thr	Cys	Ile	Asp	Gly	Val	Tyr
		995					1000					1005	
Lys	Cys	Glu	Cys	Gln	Pro	Gly	Phe	Ser	Gly	Glu	Phe	Cys	Lys
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Ile	Gln	Phe	Cys	Ser	Pro	Glu	Phe	Asn	Pro	Cys	Ala	Asn	Lys
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Cys	Met	Asp	His	Phe	Thr	His	Tyr	Ser	Cys	Asp	Cys	Gln	Phe
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His	Gly	Thr	Asn	Cys	Thr	Asp	Asn	Ile	Asp	Asp	Cys	Gln	Met
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Cys	Gln	Asn	Gly	Gly	Thr	Cys	Val	Asp	Gly	Ile	Asn	Asp	Cys
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Arg	Cys	Pro	Asp	Asp	Tyr	Thr	Gly	Lys	Tyr	Cys	Glu	Gly	Met
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Lys	His	Gly	Val	Cys	Phe	Gln	Pro	Asn	Ala	Gln	Gly	Ser	Leu
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Cys	Arg	Cys	His	Pro	Gly	Tyr	Thr	Gly	Lys	Trp	Cys	Glu	Thr
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Arg	Thr	Arg	Pro	Glu	Ala	Asn	Val	Thr	Ile	Val	Phe	Ser	Glu
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Gln	Asn	Gly	Ile	Leu	Met	Tyr	Asp	Gly	Gln	Asp	Ala	His	Val
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Glu	Leu	Phe	Asn	Gly	Arg	Ile	Arg	Val	Ser	Tyr	Asp	Val	His
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Pro	Val	Ser	Thr	Met	Tyr	Ser	Phe	Glu	Met	Val	Ala	Asp	Tyr
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His Ala Val Glu Leu Leu Ala Ile Lys Lys Asn Phe Thr Leu Arg Val  
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Asp Arg Gly Leu Ala Arg Ser Ile Ile Asn Glu Gly Ser Asn Asp Tyr  
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Leu Lys Leu Thr Thr Pro Met Phe Leu Gly Gly Leu Pro Val Asp Pro  
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Ala Gln Gln Ala Tyr Lys Asn Trp Gln Ile Arg Asn Leu Thr Ser Phe  
1285 1290 1295

Lys Gly Cys Met Lys Glu Val Trp Ile Asn His Lys Leu Val Asp Phe  
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Gly Asn Ala Gln Arg Gln Gln Lys Ile Thr Pro Gly Cys Ala Leu Leu  
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Glu Gly Glu Gln Gln Glu Glu Glu Asp Asp Glu Gln Asp Phe Met Asp  
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Glu Thr Pro His Ile Lys Glu Glu Pro Val Asp Pro Cys Leu Glu Asn  
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Lys Cys Arg Arg Gly Ser Arg Cys Val Pro Asn Ser Asn Ala Arg Asp  
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Gly Tyr Gln Cys Lys Cys Lys His Gly Gln Arg Gly Arg Tyr Cys Asp  
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Gln Gly Glu Gly Ser Thr Glu Pro Pro Thr Val Thr Ala Ala Ser Thr  
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Cys Arg Lys Glu Gln Val Arg Glu Tyr Tyr Thr Glu Asn Asp Cys Arg  
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Ser Arg Gln Pro Leu Lys Tyr Ala Lys Cys Val Gly Gly Cys Gly Asn  
1425 1430 1435 1440

Gln Cys Cys Ala Ala Lys Ile Val Arg Arg Arg Lys Val Arg Met Val  
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Cys Gly Cys Thr Lys Lys Cys Tyr  
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Lys Arg Leu Arg Lys Lys Lys Phe Ala Thr Leu Pro Pro Asn Lys Phe  
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Lys Cys Lys Gly Ser Glu Ser Phe Val Ser Met Tyr Ala Asp Ser Cys  
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Phe Ile Asp Ser Ile Cys Pro Thr Gln Cys Asp Cys Tyr Gly Thr Thr

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Asp	Leu	Asn	Arg	Leu	Tyr	Ser	Leu	Thr	Lys	Leu	Asp	Leu	Ser	His
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Arg	Leu	Ile	Ser	Leu	Glu	Asn	Asn	Thr	Phe	Ser	Asn	Leu	Thr	Arg
	50					55					60			Leu
Ser	Thr	Leu	Ile	Ile	Ser	Tyr	Asn	Lys	Leu	Arg	Cys	Leu	Gln	Pro
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Ala	Phe	Asn	Gly	Leu	Asn	Ala	Leu	Arg	Ile	Leu	Ser	Leu	His	Gly
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Asp	Ile	Ser	Phe	Leu	Pro	Gln	Ser	Ala	Phe	Ser	Asn	Leu	Thr	Ser
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Thr	His	Ile	Ala	Val	Gly	Ser	Asn	Ser	Leu	Tyr	Cys	Asp	Cys	Asn
		115					120					125		Met
Ala	Trp	Phe	Ser	Lys	Trp	Ile	Lys	Ser	Lys	Phe	Ile	Glu	Ala	Gly
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Ala	Arg	Cys	Glu	Tyr	Pro	Asn	Thr	Val	Ser	Asn	Gln	Leu	Leu	Leu
145					150					155				160
Ala	Gln	Pro	Tyr	Gln	Phe	Thr	Cys	Asp	Ser	Lys	Val	Pro	Thr	Lys
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Ala	Thr	Lys	Cys	Asp	Leu	Cys	Leu	Asn	Ser	Pro	Cys	Lys	Asn	Asn
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Ile	Cys	Glu	Thr	Thr	Ser	Ser	Arg	Lys	Tyr	Thr	Cys	Asn	Cys	Thr
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Gly	Phe	Tyr	Gly	Val	His	Cys	Glu	Asn	Gln	Ile	Asp	Ala	Cys	Tyr
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Ser	Pro	Cys	Leu	Asn	Asn	Ala	Thr	Cys	Lys	Val	Ala	Gln	Ala	Gly
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Phe	Asn	Cys	Tyr	Cys	Asn	Lys	Gly	Phe	Glu	Gly	Asp	Tyr	Cys	Glu	Lys
				245					250					255	
Asn	Ile	Asp	Asp	Cys	Val	Asn	Ser	Lys	Cys	Glu	Asn	Gly	Gly	Lys	Cys
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Val	Asp	Leu	Val	Arg	Phe	Cys	Ser	Glu	Glu	Leu	Lys	Asn	Phe	Gln	Ser
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Cys	Glu	Asn	Asn	Gly	Lys	Cys	Ile	Pro	Ile	Asn	Gly	Ser	Tyr	Ser	Cys
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Cys	Gln	Gln	Ser	Ala	Cys	Gly	Gln	Gly	Glu	Cys	Val	Ala	Ser	Gln	Asn
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Cys	Asp	Arg	Gln	Met	Ser	Val	Gly	Phe	Lys	Asn	Pro	Gly	Ala	Tyr	Leu
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Val	Ser	Ala	Glu	Leu	Tyr	Asp	Gly	Arg	Val	Lys	Leu	Val	Tyr	Tyr	Ile
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			580					585					590		
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595						600						605					
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Met 705	Ile	Cys	Lys	Asn	Gly 710	Thr	Thr	Lys	Ile	Ser 715	Thr	Val	His	Ile	Ile 720		
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Cys Val Glu Gly Tyr Ser Gly Gln Leu Cys Glu Ile Pro Pro Ala Pro
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Arg Ser Ser Cys Glu Gly Thr Glu Cys Gln Asn Gly Ala Asn Cys Val
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Asp Gln Gly Ser Arg Pro Val Cys Gln Cys Leu Pro Gly Phe Gly Gly
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Tyr Leu Gln Phe Thr Asp Leu Gln Asn Trp Pro Arg Ala Asn Ile Thr
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Lys Asp Tyr Ala Ser Cys Ala Thr Ala Ser Lys Val Pro Ile Met Glu  
50 55 60  
Cys Arg Gly Gly Cys Gly Thr Thr Cys Cys Gln Pro Ile Arg Ser Lys  
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35 40 45  
Arg Leu Tyr Arg Leu Asp Leu Ser Glu Asn Gln Ile Gln Ala Ile Pro  
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Arg Lys Ala Phe Arg Gly Ala Val Asp Ile Lys Asn Leu Gln Leu Asp  
65 70 75 80  
Tyr Asn Gln Ile Ser Cys Ile Glu Asp Gly Ala Phe Arg Ala Leu Arg  
85 90 95  
Asp Leu Glu Val Leu Thr Leu Asn Asn Asn Ile Thr Arg Leu Ser  
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25

30

Gly Leu Phe Cys Glu His Pro Pro Pro Met Val Leu Leu Gln Thr Ser  
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 Gln Gln Glu Pro Thr Cys Arg Cys Pro Pro Gly Phe Ala Gly Pro Arg  
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 Pro Cys His Lys Lys Val Cys Ala His Gly Cys Cys Gln Pro Ser Ser  
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 Gln Ser Gly Phe Thr Cys Glu Cys Glu Glu Gly Trp Met Gly Pro Leu  
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 Cys Asp Gln Arg Thr Asn Asp Pro Cys Leu Gly Asn Lys Cys Val His  
 85 90 95  
 Gly Thr Cys Leu Pro Ile Asn Ala Phe Ser Tyr Ser Cys Lys Cys Leu  
 100 105 110  
 Glu Gly His Gly Gly Val Leu Cys Asp Glu Glu Glu Asp Leu Phe Asn  
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 Pro Cys Gln Met Ile Lys Cys Lys His Gly Lys Cys Arg Leu Ser Gly  
 130 135 140  
 Val Gly Gln Pro Tyr Cys Glu Cys Asn Ser Gly Phe Thr Gly Asp Ser  
 145 150 155 160  
 Cys Asp Arg Glu Ile Ser Cys Arg Gly Glu Arg Ile Arg Asp Tyr Tyr  
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 Gln Lys Gln Gln Gly Tyr Ala Ala Cys Gln Thr Thr Lys Lys Val Ser  
 180 185 190  
 Arg Leu Glu Cys Arg Gly Gly Cys Ala Gly Gly Gln Cys Cys Gly Pro  
 195 200 205  
 Leu Arg Ser Lys Arg Arg Lys Tyr Ser Phe Glu Cys Thr Asp Gly Ser  
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Cys Ala Ser

93

00750" 54204500

SEQ 10 NO: 1

SEQ 10 NO: 1

## Sequence of Human Slit-1

SEQ 10 NO: 2

DNA sequence and predicted protein product. Base pair and amino acid number are indicated on the right hand side.

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